

REMARKS/ARGUMENTS

Applicant responds herein to the Office Action dated November 12, 2009. A Petition for Extension of Time (two months) and the fee therefor are submitted herewith.

Responsive to the objection to the drawings, applicant has amended Fig. 2A to include in the already existing legend, the words “difference calculator”, which applicant has amply demonstrated, i.e., in the Amendment filed October 1, 2009, is very well supported in the instant specification. Therefore, the Examiner is respectfully requested to reconsider and rescind the objection to the drawings.

In the same vein, applicant notes the rejection of claims 23-37 under the first paragraph of 35 U.S.C. §112, but assumes that no response is needed, because clearly, in the context of the present specification and claims, the difference is calculated between the response of two antennas to the same base station and to the same signal.

More specifically, the Examiner’s kind attention is drawn to the text at pages 7 and 8 of the aforementioned Response filed October 1, 2009. Basically, two spaced apart antennas 100-1 and 100-2, must be “looking” at the same signal from the same base station for the instant claims to make any sense. In fact, they are described as such in the instant specification and so claimed in the instant claims. As the two antennas are moving together (because they are located on the same structure), in a particular direction either toward or away from a particular base station, by looking at the same signal from either one of the base stations (or actually both of them), these antennas allow the system to determine the direction of travel of the mobile station. Therefore, it is not necessarily the stronger signal at one particular antenna that determines which base station is selected, but rather it is the difference in the sensing of the same signal between the two antennas that determines which particular base station will be selected. Typically, it will be the base station toward which the mobile station is heading.

Therefore, applicant assumes that there is no disagreement as to the meaning of the claims with the Examiner and that the meaning mentioned above is clearly and succinctly set forth in the instant specification and claims, whereby the rejection of the instant claims under the first paragraph of 35 U.S.C. §112 has been mooted.

Substantively, claims 23-40 have been stated to be obvious over Henon (WO 01/47126).
Reconsideration is requested in view of the following remarks.

As already stated and summarized in connection with the §112 rejection, the instant claims are directed to a mobile device which needs to communicate wirelessly with a plurality of base stations.

The mobile device therefore contains two (or more) antennas that are installed spacially apart, such that the base station of which a communication quality becomes most excellent is detectable. This is because the intensity of the received antenna signal from a particular base station being communicated with, produces a different signal intensity in each of the antennas located in the same mobile device.

In other words, the two antennas located on the same mobile device must be looking at the same signal -- which means that they are looking at the same frequency signal. Moreover, the two antennas are sufficiently distanced from one another that they detect different signal intensities. As is well known, a beamed signal attenuates over distance. Here, the distance between the antennas themselves is large enough whereby, when the antennas are receiving the same signal from the same base station, they produce different signal intensities, which are compared to one another.

The hand-over facility is configured to hand over, i.e., switch from one base station to another, based on the difference in the signal states, e.g. based on the received signal intensities in each of the antennas located on the same mobile device.

Turning to Henon, this reference relates -- as its title indicates -- to a mobile station with two transceivers and "inter-frequency methods" performed using the two transceivers. In other words, the very purpose of providing two transceivers is for effecting inter-frequency methods. As the text of this document reveals, the two transceiver arrangement enables the performance of an inter-frequency soft hand-over method, without using a compress mode, and providing an inter-frequency signal quality measurement method without using a slotted mode. When the two antennas are tuned to the same operating frequency, their signals are combined to exploit an antenna diversity effect, to avoid a fading signal phenomena.

The Office Action directs the applicant to Figs. 2A to Fig. 2C and to lines 12-21 of page 1 of the cited reference, and also to certain text on page 6 thereof. This reference sets the criterion for

establishing the distance between the antennas such that, at the time when one of two tunable receivers performs a reception in a certain frequency, it enables the other tunable transceiver to perform a transmission in a different frequency, thus allowing the antenna diversity effect to be exploited.

As is well known, the so-called antenna diversity effect is utilized in the art for alleviating the unwanted influence of a fading signal coming from an identical base station. In the system of the prior art, almost no transmission/reception at a different frequency occurs when the effective filter is used.

Therefore, even though each of the antennas is spaced sufficiently apart from the base station, this reference says nothing and it is extremely unlikely, given its text and technological context, that these antennas can be physically spaced sufficiently apart to such an extent that the reception power at the two antennas relative to the same signal of the same base station would have different maximums in each of the two antennas, which is so clearly relevant relative to the instant specification and claims, but irrelevant in the Henon prior art.

Indeed, as is very apparent from Fig. 2 and from the specification of the Henon reference, Henon changes the frequency without fail whenever the two antennas simultaneously communicate with a different base station, respectively.

In marked contrast, in accordance with the instant claims, the claimed device utilizes the fact that the arrangement of the antennas provides sufficiently large spacing therebetween that the maximum reception power in each of the antennas differs in each of the two antennas even when they are “looking” at the same and identical signal, i.e., a signal which is at the same frequency. This feature is unique to the instant claims and enables a hand-over process to take place, not merely by reference to the strongest signal at a particular antenna, but in conjunction with being able to determine the direction toward or away from a particular base station.

In addition, another clear difference of the effects between the present invention and the cited reference concerns the fact that arranging the antennas sufficiently apart allows base station diversity to be reinforced (namely, the area in which the base station diversity effect is made wider, as compared with the case of the conventional art), and this effect cannot be obtained from the cited reference.


Thereby, the present invention and the antenna diversity effect can be used together as separate technologies. To do so, two antennas for the antenna optimization can be arranged in each of two locations at a position A and at a position B. By having two antennas at each of the position A and the position B, one would obtain the benefits of obtaining "antenna diversity" at each position, and also the benefits of the present invention of knowing the direction to which a mobile station is heading. In other words, the arrangement benefits and the technology effects defined in the instant claims and that in the cited Henon reference differ markedly from one another and serve different purposes.

Accordingly, it is respectfully submitted that the independent claims herein define patentable subject matter and, naturally, so do their dependent claims which also merit to be promptly allowed.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims and pass this case to issue.

THIS CORRESPONDENCE IS BEING
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